UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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ATLANTA, GEORGIA 30303-8960

OCT 25 2017

Ms. Rhonda Thompson
Chief
Bureau of Air Quality Control
South Carolina Department of Health and
Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Thompson:

Thank you for submitting the state of South Carolina's 2017 annual ambient air monitoring network plan (Network Plan) dated July 1, 2017. The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10.

The U.S. Environmental Protection Agency understands that the South Carolina Department of Health and Environmental Control (DHEC) provided the public a 30-day review period for its draft Network Plan. One comment was received and the DHEC responded to this comment in the final Network Plan.

The EPA approves the Network Plan. Details regarding the EPA's review of the Network Plan are provided in the enclosed comments. Thank you for working with us to monitor air pollution and promote healthy air quality in South Carolina. If you have any questions or concerns, please contact Gregg Worley at (404) 562-9141 or Ryan Brown at (404) 562-9147.

Sincerely,

Carol L. Kemker for

Beverly H. Banister
Director
Air, Pesticides and Toxics Management Division

Enclosure

cc: Mr. Robert Brown , Director
SC DHEC

Mr. Michael Mattocks, Director
SC DHEC

Mr. Darin Steen, Director
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CY 2017 State of South Carolina Ambient Air Monitoring Network Plan
The U.S. EPA Comments and Recommendations

This document contains the U.S. Environmental Protection Agency comments and recommendations regarding the state of South Carolina's 2017 ambient air monitoring network plan (Network Plan). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O_3), particulate matter less than 2.5 microns ($PM_{2.5}$), particulate matter less than 10 microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries as defined by the U.S. Office of Management and Budget (OMB), July 1, 2016, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O_3, $PM_{2.5}$, and PM_{10} only apply to metropolitan statistical areas (MSAs) which are a subset of CBSAs. OMB currently defines 10 MSAs in the state of South Carolina. These MSAs and the respective July 1, 2016, population estimates from the U.S. Census Bureau are shown in Table 1.

Table 1: Metropolitan Statistical Areas and Populations

MSA Name	Population
Charlotte-Gastonia-Concord NC-SC	2,474,314
Greenville-Anderson-Mauldin, SC	884,975
Columbia, SC	817,488
Charleston-North Charleston-Summerville, SC	761,155
Augusta-Richmond County, GA-SC	594,919
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	449,295
Spartanburg, SC	329,136
Hilton Head Island-Bluffton-Beaufort, SC	211,614
Florence, SC	205,976
Sumter, SC	107,396

Proposed Monitoring Network Changes

The South Carolina Department of Health and Environmental Control (DHEC) did not propose any changes to its monitoring network in FY 2017. The EPA fully approves the previously, conditionally approved relocation of the York monitoring site based on supplementary information provided by the DHEC in the Network Plan (see Table 2).

Table 2: Monitors Proposed for Relocation or Possible Relocation

AQS ID	Site Name	Pollutant	Type	Comments
45-091-0006	York	O_3	SLAMS	Approved. The EPA conditionally approved this relocation, in 2016. SC DEHC submitted additional site information to the EPA and included this information in the Network Plan. New site - York (AQS ID 45-091-0008).

Operating Schedules
40 CFR § 58.12

The monitoring network proposed in the Network Plan meets the required operating schedules for all continuous analyzers and all manual Pb, PM_{10}, $PM_{2.5}$, and $PM_{2.5}$ Speciation Trends Network (STN) monitors. The DHEC did not proposed any changes to its operating schedules in the Network Plan.

Air Quality Index (AQI) Reporting
40 CFR §58.50

AQI reporting is required in MSAs with populations over 350,000. There are four MSAs in the state of South Carolina required to report an AQI: Greenville-Anderson-Mauldin, Columbia, Charleston-North Charleston, and Myrtle Beach-Conway-North Myrtle Beach MSAs. The Network Plan indicates that the daily AQI for all of these areas is available on the EPA's AIRNow web site, as well as areas in and around Aiken, SC (in the Augusta-Richmond County, GA-SC CBSA); Florence-Darlington, SC; and York-Chester-Lancaster, SC (in the Charlotte–Concord–Gastonia, NC-SC CBSA). The DHEC monitoring network satisfies the minimum AQI reporting requirements in 40 CFR Part 58.

National Core (NCore) Monitoring Network
40 CFR Part 58, Appendix D, 3

A requirement that each state operate at least one NCore site is found in 40 CFR Part 58, Appendix D, Section 3. The state's approved NCore site is located in Columbia at the Parklane site (AQS ID 45-079-0007) and DHEC has not proposed any changes for the site in its Network Plan.

O_3 Monitoring Requirements
40 CFR Part 58, Appendix D, Table D-2

In 2016, the EPA conditionally approved the relocation of the York CMS O_3 monitoring site (AQS ID 45-091-0006) to the proposed York site (AQS ID 45-091-0008), pending receipt of further information about the proposed York site. The DHEC submitted the requested supplemental information on January 17, 2017, demonstrating that the York site meets siting criteria and included this information as well as previously submitted information about the York site in Network Plan. The EPA fully approves the relocation of the York monitoring site.

The DHEC O_3 monitoring network outlined in the Network Plan meets the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-2 for all MSAs in South Carolina.

SO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, 4.4

Ambient air monitoring network design criteria for SO_2 are found in Section 4.4 of 40 CFR Part 58, Appendix D. This section requires that "The population weighted emissions index (PWEI) shall be calculated by states for each core-based statistical area (CBSA)…" As a result, the SO_2 monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. An SO_2 monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a

CBSA with minimally required monitors consistent with Appendix D, Section 4.4. Based upon PWEIs calculated using the latest population estimates and 2012 emission inventory data, the minimum numbers of monitors required for the CBSAs in South Carolina are summarized in Table 4.

Table 4: SO_2 Monitoring System Status – PWEI Requirements

CBSA Name	SLAMS Required	SLAMS Present	SO_2 SLAMS site
Augusta-Richmond County, GA-SC	1	1	Bungalow Road (AQS ID 13-245-0091)
Charleston-North Charleston-Summerville, SC	1	1	Jenkins Ave Fire Station (AQS ID 45-019-0003)
Charlotte-Gastonia-Concord, NC-SC	1	1	Garinger High School (AQS ID 37-119-0041)
Columbia, SC	1	1	Parklane (AQS ID 45-079-0007)
Greenville-Anderson-Mauldin, SC	1	1	Greenville ESC (AQS ID 45-045-0015)

Based upon the information summarized in Table 4, the SO_2 monitoring network outlined in the Network Plan meets the SO_2 PWEI requirements specified in 40 CFR Part 58, Appendix D, Section 4.4. The DHEC operates SO_2 monitors in the Charleston-North Charleston-Summerville, SC; Columbia, SC; and Greenville-Anderson-Mauldin, SC CBSAs to meet the PWEI requirements. The DHEC has a memorandum of agreement (MOA) with the Georgia Environmental Protection Division (GA EPD) to share monitoring requirements for all criteria pollutants in the Augusta-Richmond County, GA-SC MSA. The GA EPD operates the Bungalow Road SO_2 monitor (AQS ID 13-245-0091) to meet the PWEI requirement for the Augusta area. The DHEC has an MOA with Mecklenburg County Air Quality (MCAQ) to share the monitoring requirements for the Charlotte-Gastonia-Concord NC-SC CBSA. The MCAQ operates an SO_2 monitor at its Garinger High School site (AQS ID 37-119-0041) to meet the PWEI requirement in the Charlotte area.

The EPA finalized the SO_2 Data Requirements Rule (DRR) (see 80 *Federal Register*, No. 162) on August 21, 2015. This rule requires characterization of the air quality near sources with SO_2 emissions greater than 2,000 tons per year by conducting ambient air monitoring or modeling. On January 15, 2016, the DHEC submitted to EPA a list of eight sources in the state around which SO_2 air quality must be characterized. These eight sources were characterized using modeling and/or took federally enforceable emissions limits. The DHEC is not operating any SO_2 monitoring sites to meet the DRR requirements. The SO_2 monitoring network described in the Network Plan meets all of the design criteria of 40 CFR Part 58.

NO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, 4.3

Ambient air monitoring network design criteria for NO_2 are found in 40 CFR Part 58, Appendix D, Section 4.3. There are three types of required NO_2 monitoring: near-road, area-wide, and Regional Administrator. These types of NO_2 monitoring are described in Sections 4.3.2, 4.3.3 and 4.3.4, respectively.

Ambient air monitoring design criteria for near-road NO_2 monitoring sites are found in 40 CFR Part 58, Appendix D, Section 4.3.2. The requirement for near-road monitoring in the Charlotte-Gastonia-Concord NC-SC CBSA is met by the Remount site (AQS ID 37-119-0045) operated by the MCAQ in Charlotte, North Carolina. No other CBSA in South Carolina is required to have near-road NO_2 monitoring, at this time.

The EPA's Phase 3 regulatory requirements included the establishment of an NO_2 near-road site in CBSAs with populations between 500,000 and 1,000,000 by January 1, 2017. South Carolina has four CBSAs in this population range, according to the U.S. Census Bureau's 2016 estimates: Greenville-Anderson-Mauldin, SC; Columbia, SC; Charleston-North Charleston-Summerville, SC, and Augusta-Richmond County, GA-SC. The EPA published a final rule that removed this NO_2 monitoring requirement (also known as Phase 3 of the near-road network) from Appendix D of 40 CFR Part 58 and it became effective on December 30, 2016 (81 FR 96381). Accordingly, these four CBSAs in South Carolina are no longer required to establish NO_2 near-road monitors.

Ambient air monitoring network design criteria for area-wide NO_2 sites are found in Section 4.3.3 of Appendix D to 40 CFR Part 58. The Garinger High School site (AQS ID 37-119-0041) operated by the MCAQ fulfills the area-wide NO_2 monitoring requirement for the Charlotte-Gastonia-Concord NC-SC CBSA. No other CBSA in South Carolina is required to have area-wide NO_2 monitoring.

Ambient air monitoring network design criteria for Regional Administrator required NO_2 monitoring, often referred to as RA-40 monitoring, are found in 40 CFR Part 58, Appendix D, Section 4.3.4. Under these provisions, Regional Administrators must require a minimum of 40 additional NO_2 monitoring stations nationwide, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. Previously, the EPA selected the Greenville ESC site (AQS ID 450-045-0015) as a location for an RA-40 NO_2 monitoring site. The full list of NO_2 monitors identified by EPA's Regional Administrators can be found on EPA's website at http://www.epa.gov/ttnamti1/svpop.html. The NO_2 monitoring network described in the Network Plan meets all of the design criteria of 40 CFR Part 58.

Pb Monitoring Requirements
40 CFR Part 58, Appendix D, 4.5

40 CFR Part 58, Appendix D, Section 4.5 requires that "At a minimum, there must be one source-oriented SLAMS [State and Local Air Monitoring Station] site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year…"

Although the DHEC has no sources that exceed the thresholds for Pb monitoring, the Johnson Control Battery Group conducts source-based ambient Pb monitoring at three sites around the Florence Recycling Center in Florence, South Carolina. The company conducts this monitoring under terms of a settlement agreement reached with several petitioners who commented on the construction permit for the facility. Locations for the monitoring sites were selected based upon an agreement between the company and the stakeholders.

The requirement to measure Pb-PM_{10} at NCore sites in areas with populations over 500,000 was proposed for discontinuation due to the extremely low concentrations being measured at these sites. On March 28, 2016, the EPA published changes in the ambient air monitoring rules for the NCore network design and removed Pb monitoring from the requirements (81 FR 17248). This rule became effective on April 27, 2016. The DHEC currently plans to continue to operate Pb monitoring at its NCore site, Parklane (AQS ID 45-079-0007). The Pb monitoring network described in the Network Plan meets all of the design criteria of 40 CFR Part 58.

PM_{10} Monitoring Requirements
40 CFR Part 58, Appendix A, 3.3.1
40 CFR Part 58, Appendix D, Table D-4

The EPA has determined that the PM_{10} monitoring network outlined in the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-4 for all MSAs. Also, all manual PM_{10} collocation requirements are met.

$PM_{2.5}$ Monitoring Requirements
40 CFR Part 58, Appendix A, 3.2.5
40 CFR Part 58, Appendix D, Table D-5

The EPA has determined that the $PM_{2.5}$ monitoring network outlined in the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-5 for all MSAs. Also, all $PM_{2.5}$ collocation requirements are met.

$PM_{2.5}$ Continuous Monitoring Requirements
40 CFR Part 58, Appendix D, 4.7.2

Regulatory provisions for continuous $PM_{2.5}$ monitoring require that "The State, or where appropriate, local agencies must operate continuous $PM_{2.5}$ analyzers equal to at least one-half (round up) of the minimum required sites listed in Table D–5 of this Appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM [Federal Reference Method/Federal Equivalent Method/Approved Regional Method] monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies." After a review of the Network Plan, the EPA has determined that the proposed $PM_{2.5}$ continuous monitoring network meets or exceeds the minimum requirements in all of the MSAs in the state. Also, the continuous $PM_{2.5}$ collocation requirements are met in all MSAs.

$PM_{2.5}$ Background and Transport Sites
40 CFR Part 58, Appendix D, 4.7.3

Forty (40) CFR Part 58, Appendix D, Section 4.7.3 requires that "Each State shall install and operate at least one $PM_{2.5}$ site to monitor for regional background levels and at least one $PM_{2.5}$ site to monitor for regional transport." The Network Plan identifies Ashton (AQS ID 45-029-0002) in Colleton County as a regional background site and Chesterfield (AQS ID 45-025-0001) in Chesterfield County as a regional transport site. Therefore, the DHEC has satisfied the requirements of 40 CFR Part 58 for regional background and transport sites.

$PM_{2.5}$ Chemical Speciation Network (CSN)
40 CFR Part 58, Appendix D, 4.7.4

The EPA conducted an assessment of the CSN in an effort to optimize and create a network that is sustainable going forward. As a result of this assessment, the EPA defunded a number of monitoring sites, eliminated the CSN $PM_{2.5}$ mass measurement, reduced the frequency of carbon blanks, reduced sample frequency at monitoring sites, and reduced the number of icepacks in shipments during the cooler months of the year.

The EPA defunded two CSN monitors at sites in South Carolina: Chesterfield (AQS ID 45-025-0001) and Greenville ESC (AQS ID 45-045-0015). The Chesterfield speciation monitor continues to operate with state funding.

Photochemical Assessment Monitoring Station (PAMS)
40 CFR Part 58, Appendix D, 5.0

With the passage of a new O_3 NAAQS on October 1, 2015, the EPA also finalized changes to the PAMS program. By June 1, 2019, the NCore sites in CBSAs with greater than 1,000,000 population will be required to implement PAMS monitoring. Parklane (AQS ID 45-079-0007) is not required to operate PAMS monitoring since the Columbia CBSA's population is less than one million. The PAMS requirement is met by the state.

Monitoring Siting Criteria and Site Assessments
40 CFR Part 58, Appendix A, B, C, D, and E

In reference to the Network Plan, 40 CFR §58.10(a)(1) states "[t]he plan shall include a statement of whether the operation of each monitor meets the requirements of appendices A, B, C, D, and E of this part, where applicable. The Regional Administrator may require additional information in support of this statement." The Network Plan includes assessment information for all monitoring sites. The EPA appreciates the inclusion of this information and the work that the DHEC has done to evaluate siting criteria at all of its monitoring sites.